



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMPTON CENTER FOR PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09-882,241	06/15/2001	Robert C. Schmidt JR.	1933.BDM	1360

7590 11/06/2002

Cynthia L. Foulke
National Starch & Chemical Company
Box 6500
Bridgewater, NJ 08807-0500

EXAMINER

RIBAR, TRAVIS B

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,241

Applicant(s)

SCHMIDT ET AL.

Examiner

Travis B Ribar

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 5 and 11 recite the limitation "DMDEE" in line 1 of each claim. There is insufficient antecedent basis for this limitation in the claim. The examiner will examine this phrase to mean that the catalyst is the one referred to on page 2 of the specification. This rejection can be overcome by replacing "DMDEE" with the proper name of the compound.

4. Regarding claims 1, 3, 7, and 9, it is unclear from the language of the claim what comprises a non-reactive acrylic. It is unclear if the acrylic is meant to be completely inert or if it may have reactive groups present. The specification does not appear to give a full and complete definition of this phrase or the materials that are classified according to this term. For the purposes of this examination, this claim will be presumed to mean that the non-reactive acrylic is a second polymer (in addition to the polyurethane formed by the reaction of the polyols with the isocyanates) that is present in the hot-melt adhesive. Further, the examiner notes that the example that the

Art Unit: 1711

applicant included on page 14 of the specification appears to indicate that the non-reactive acrylic may comprise reactive groups (OH functional acrylics in the example), and the examiner is uncertain of how reactive acrylics would then differ from non reactive acrylics.

5. All other claims rejected under this heading are rejected due to their dependence from the above claims.

Claim Interpretations

6. The examiner is interpreting claims 1 and 7 to mean that the adhesives the applicant claims could conceivably comprise 0 parts of either the polyester polyol, the polyether polyol, or the non-reactive acrylic, but that the adhesive must include some amount of a functional acrylic. The examiner bases this interpretation on the claim language itself, where the applicant has used the lower limitation of, "about 0" when defining the amount of the polyester polyol, the polyether polyol, and the non-reactive acrylic, but the limitation of, "about 1" when defining the amount of functional acrylic. In this case, the definition of, "about 1" is markedly different from, "about 0" because of the simultaneous use of both phrases in the claim. Whereas the phrase, "about 1" would normally include 0, the examiner takes the applicant's claim language to mean that it may not in this context.

Claim Rejections - 35 USC § 102

Art Unit: 1711

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 4, 6-8, 10, and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Wolinski.

Wolinski discloses an adhesive comprising polyester polyols (column 4, lines 15-62) and/or polyether polyols (column 3, lines 44-68) with isocyanates (column 5, line 41 to column 6, line 32), reactive acrylics (column 6, line 55 to column 7, line 44), a free-radical catalyst (column 8, lines 6-8), and fillers (column 8, line 45). This composition meets the compositional requirements of claims 1, 4, 6-7, 10, and 12 due to the interpretation of the claims described earlier in the office action. Here the examiner notes that the reference also teaches the adhesive's use to bond two substrates together, so article of manufacture in claim 13 and the methods of bonding in claims 1 and 7. Regarding the materials being subject to stress prior to adhesive cure (in claims 1 and 7), the examiner notes that this part of the claim is not further limiting the method that is claimed.

The weight percents that the applicant claims in claims 1-2 and 7-8 are also present in the reference (column 8, lines 10-29), as are the cooling in ambient air (exposed to moisture in the air) and hot-melt characteristics of the adhesive (column 13, lines 38-42). The amounts of the isocyanate and polyol in Wolinski are not expressly stated, though it is immediately envisioned that the polyurethane is made from a mixture

Art Unit: 1711

of isocyanates and polyols that are present in an amount within the wide range that the applicant claims, as such compositions are well known in the art to form suitable polyurethanes.

9. Claims 1-2, 4-8, and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al. as evidenced by Helmeke et al.

Yang et al. discloses a hot melt adhesive comprising polyisocyanate (column 5, lines 4-22), polyether and/or polyester polyols (column 4, lines 24-55), catalyst (see the abstract), filler (column 8, line 45), and reactive acrylates (column 5, line 61 to column 6, line 8). The amounts of each (column 7, lines 9-32 and column 7, line 64 to column 8, line 16) meet the restrictions in claims 1-2, 4, 6-8, 10, and 12. Further, the reference teaches the use of the hot melt adhesive to be the same as the method that the applicant claims in claims 1 and 7 and are useful in bonding multiple substrates together (column 9, line 48 to column 10, line 2) to form an article, meeting claim 13.

The catalyst that the reference uses is not called DMDEE by name, though it is known in the art that the catalyst in the reference is DMDEE, as Helmeke et al. shows (column 6, lines 14-21). Yang et al. therefore anticipates claims 5 and 11 as well.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1711

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Yang et al.

Wolinski discloses the hot melt adhesive of claims 1 and 4, but does not disclose that DMDEE is the catalyst in the reaction. Yang et al. discloses that DMDEE is a useful catalyst in polyurethane hot melt moisture cure adhesives, as disclosed above.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use DMDEE as the catalyst in the invention in Wolinski. The motivation for doing so would be to use catalyst that is known in the art in a reaction for which it is known in the art to act as a catalyst. Therefore it would have been obvious to combine Yang et al. with Wolinski to obtain the invention as specified in claims 5 and 11.

12. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helmeke et al. in view of Wolinski.

Helmeke et al. discloses a hot melt moisture cure adhesive composition that includes isocyanates (column 5, lines 25-56), an acrylate polymer – or non reactive acrylate – (column 6, lines 33-56), polyester and polyether polyols (column 2, line 66 to column 3, line 9), DMDEE catalyst (column 6, line 14-21), and filler (column 7, line 24). The adhesive is disclosed as part of a laminate structure (column 3, line 29), meeting that part of claim 13, and the amounts of each component in the adhesive (see column 5, line 14 and example 1) cause this reference to meet those parts of claims 1-12. The

Art Unit: 1711

method of using the hot melt moisture cure adhesive is also the same method that the applicant claims.

Helmeke et al. does not, however, disclose the use of a reactive acrylate in the adhesive composition. Wolinski teaches this aspect of the invention and discloses that reactive acrylates are advantageously utilized in adhesive compositions (column 6, line 55 to column 7, line 44). Advantages to adhesives of this type are that they cure quickly and exhibit improved strength (see the abstract).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include reactive acrylics in the adhesive composition in Helmeke et al. The motivation for doing so would be to improve the cure time and the physical properties of the adhesive. Therefore it would have been obvious to combine Wolinski with Helmeke et al. to obtain the invention as specified in claims 1-13.

13. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helmeke et al. in view of Yang et al.

Helmeke et al. discloses a hot melt moisture cure adhesive composition that includes isocyanates (column 5, lines 25-56), an acrylate polymer – or non reactive acrylate – (column 6, lines 33-56), polyester and polyether polyols (column 2, line 66 to column 3, line 9), DMDEE catalyst (column 6, line 14-21), and filler (column 7, line 24). The adhesive is disclosed as part of a laminate structure (column 3, line 29), meeting that part of claim 13, and the amounts of each component in the adhesive (see column 5, line 14 and example 1) cause this reference to meet those parts of claims 1-12. The

Art Unit: 1711

method of using the hot melt moisture cure adhesive is also the same method that the applicant claims.

Helmeke et al. does not, however, disclose the use of a reactive acrylate in the adhesive composition. Yang et al. teaches this aspect of the invention and discloses that reactive acrylates are advantageously utilized in adhesive compositions (column 5, line 61 to column 6, line 8). Advantages to adhesives of this type are that they cure quickly and exhibit an improved pot life (see the examples).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include reactive acrylics in the adhesive composition in Helmeke et al. The motivation for doing so would be to improve the cure time and the physical properties of the adhesive. Therefore it would have been obvious to combine Yang et al. with Helmeke et al. to obtain the invention as specified in claims 1-13.

14. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Helmeke et al.

Wolinski teaches most aspects of the invention, as discussed above, but does not include the DMDEE catalyst or the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Helmeke et al. discloses these aspects of the invention. The acrylic polymer that is included in the adhesive composition (column 6, lines 33-56) improves the green strength of the adhesive and the catalyst for the reaction is DMDEE (column 6, lines 14-21).

Art Unit: 1711

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Wolinski and to use DMDEE as the catalyst for the polymerization in the adhesive. The motivation for doing so would be to improve the green strength of the adhesive by adding the acrylic polymer and to catalyze the reaction using a known catalyst (DMDEE). Therefore it would have been obvious to combine Helmeke et al. with Wolinski to obtain the invention as specified in claims 1-13.

15. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. as evidenced by Helmeke et al. in view of Helmeke et al.

Yang et al. as evidenced by Helmeke et al. teaches most aspects of the invention, as discussed above, but does not include the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Helmeke et al. discloses this aspect of the invention and teaches that the acrylic polymer that is included in the adhesive composition (column 6, lines 33-56) improves the green strength of the adhesive.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Yang et al. The motivation for doing so would be to improve the green strength of the adhesive by adding the acrylic polymer. Therefore it would have been obvious to combine Helmeke et al. with Yang et al. to obtain the invention as specified in claims 1-13.

Art Unit: 1711

16. Claims 1-4, 6-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Markevka et al.

Wolinski teaches most aspects of the invention, as discussed above, but does not include the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Markevka et al. discloses this aspect of the invention, and the acrylic polymer that is included in the adhesive composition (column 5, line 33) improves the green strength of the adhesive (column 6, line 46).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Wolinski. The motivation for doing so would be to improve the green strength of the adhesive by adding the acrylic polymer. Therefore it would have been obvious to combine Markevka et al. with Wolinski to obtain the invention as specified in claims 1-4, 6-10, and 12-13.

17. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Markevka et al. as applied to claims 1-4, 6-10, and 12-13 above, and further in view of both Yang et al. and Helmeke et al.

The combination of Wolinski and Markevka et al. do not include DMDEE as the catalyst in the reaction. However, both Yang et al. (see the abstract) and Helmeke et al. (column 6, lines 14-21), teach that DMDEE is a well-known catalyst in adhesives of this type.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use DMDEE as the catalyst in the reaction in the adhesive taught by

Art Unit: 1711

the combination of Wolinski and Markevka et al. The motivation for doing so would be to use catalyst that is known in the art in a reaction for which it is known in the art to act as a catalyst. Therefore it would have been obvious to combine Yang et al. and Helmeke et al. with the combination of Wolinski and Markevka et al. to obtain the invention as specified in claims 5 and 11.

18. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. as evidenced by Helmeke et al. in view of Markevka et al.

Yang et al. as evidenced by Helmeke et al. teaches most aspects of the invention, as discussed above, but does not include the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Markevka et al. discloses this aspect of the invention and teaches that the acrylic polymer that is included in the adhesive composition (column 5, line 33) improves the green strength of the adhesive (column 6, line 46).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Yang et al. The motivation for doing so would be to improve the green strength of the adhesive by adding the acrylic polymer. Therefore it would have been obvious to combine Markevka et al. with Yang et al. to obtain the invention as specified in claims 1-13.

19. Claims 1-4, 6-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Shimizu.

Wolinski teaches most aspects of the invention, as discussed above, but does not include the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Shimizu discloses this aspect of the invention, and the acrylic polymer that is included in the adhesive composition (column 5, lines 61-66) improves the performance of the adhesive (see the abstract).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Wolinski. The motivation for doing so would be to improve the performance of the adhesive by adding the acrylic polymer. Therefore it would have been obvious to combine Shimizu with Wolinski to obtain the invention as specified in claims 1-4, 6-10, and 12-13.

20. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolinski in view of Shimizu as applied to claims 1-4, 6-10, and 12-13 above, and further in view of both Yang et al. and Helmeke et al.

The combination of Wolinski and Shimizu do not include DMDEE as the catalyst in the reaction. However, both Yang et al. (see the abstract) and Helmeke et al. (column 6, lines 14-21), teach that DMDEE is a well-known catalyst in adhesives of this type.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use DMDEE as the catalyst in the reaction in the adhesive taught by the combination of Wolinski and Shimizu. The motivation for doing so would be to use catalyst that is known in the art in a reaction for which it is known in the art to act as a

Art Unit: 1711

catalyst. Therefore it would have been obvious to combine Yang et al. and Helmeke et al. with the combination of Wolinski and Shimizu to obtain the invention as specified in claims 5 and 11.

21. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. as evidenced by Helmeke et al. in view of Shimizu.

Yang et al. as evidenced by Helmeke et al. teaches most aspects of the invention, as discussed above, but does not include the necessary inclusion of a second polymer with the polyurethane polymer that it teaches. Shimizu discloses this aspect of the invention and teaches that the acrylic polymer that is included in the adhesive composition (column 5, lines 61-66) improves the performance of the adhesive (see the abstract).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an acrylic polymer in the adhesive composition in Yang et al. The motivation for doing so would be to improve the performance of the adhesive by adding the acrylic polymer. Therefore it would have been obvious to combine Shimizu with Yang et al. to obtain the invention as specified in claims 1-13.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 1711

The applicant's attention is directed to Reid et al. ('449), Reid et al. ('978), and Bouttefort et al., which all teach the inclusion of a thermoplastic acrylate in hot melt adhesives. Li et al. discloses the usefulness of using polyester and polyether polyols in hot melt moisture curable adhesives.

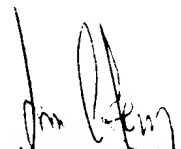
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis B Ribar whose telephone number is (703) 305-3140. The examiner can normally be reached on 8:30-5:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Travis B Ribar
Examiner
Art Unit 1711

TBR
November 1, 2002


James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700